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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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08/892,902 07/14/97 WALLER

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EXAMINER

YAMNITZKY, M

| ART UNIT | PAPER NUMBER |
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1774

14

DATE MAILED:

05/16/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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|------------------------------|--------------------------------------|---|
| Office Action Summary | Application No. 08/892,902 | Applicant(s) Clinton P. WALLER Jr. et al. |
| | Examiner M. Yamnitzky | Group Art Unit 1774 |

Responsive to communication(s) filed on Mar 8, 2000 and April 5, 2000.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three (3) month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1, 5, 10-14, 16, 18, 19, and 21-36 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) 1, 5, 10-14, 16, 18, 19, 21, 23, and 24 is/are allowed.

Claim(s) 22 and 25-36 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. The request filed on 03/08/00 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/892,902 is acceptable and a CPA has been established. An action on the CPA follows.

2. The preliminary amendment filed 04/05/00 (Paper No. 13) has been entered. Paper No. 13 amends the specification, cancels claims 4 and 15, amends claims 1, 16, 18, 19, 22 and 23, and adds claims 25-36.

Claims 1, 5, 10-14, 16, 18, 19 and 21-36 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. All grounds of rejection as applied in the previous Office action to claims 1, 5, 10-14, 16, 18, 19, 21, 23 and 24 are overcome by the claim amendments made in Paper No. 13.

Claims 1, 5, 10-14, 16, 18, 19, 21, 23 and 24 are allowed.

4. This Office action raises a new issue under 35 U.S.C. 112, second paragraph regarding applicants' use of the term "inorganic" in the phrase "inorganic multivalent metal salt". This new issue is not necessitated by applicants' amendment and the examiner regrets the delay in raising the issue.

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5. Claims 22 and 25-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants' use of the term "inorganic" in the phrase "inorganic multivalent metal salt" is confusing in view of the specification (especially page 16, lines 9-12) and claim 25. The examples of inorganic multivalent metal salts given in the specification and explicitly claimed in claim 25 include metal salts of organic ions (e.g. "alkanesulfonate", "fluoroalkanesulfonates" (provided less than all hydrogen atoms of the alkane are replaced by fluorine atoms), "acetate" and "propionate"). The scope of the term "inorganic" and the phrase "inorganic multivalent metal salt", as used by applicants, is not clear.

6. Claims 22, 25-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousin et al. (4,554,181).

Cousin et al. disclose an ink jet recording sheet comprising a porous substrate and a polyvalent metal salt. Cousin et al. teach that cationic or non-ionic surfactants may be included in the recording surface so as to increase the speed with which the ink wets the surface, and enhance rapidity of set and enhance absorption. For example, see column 2, lines 38-51, c. 5, l. 30-31 and 46-63, c. 6, l. 12-28, and c. 8, l. 33-36.

The surfactants included in the recording surface constitute a fluid management system. The polyvalent metal salt is inherently in contact with surfaces of the pores of the substrate, and

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meets the requirement for a pigment management system comprising an inorganic multivalent metal salt coating. The examiner notes that while the prior art teaches a preference for salts of organic acids (such as acetates), the prior art teaches that salts of inorganic acids are usable (e.g. see c. 5, l. 62-66). The examiner also notes that present applicants include some salts of organic acids (e.g. "acetate") within the scope of inorganic multivalent metal salts (e.g. as explicitly claimed in dependent claim 25).

Cousin et al. teach that the substrate may be made from paper, synthetic paper, or plastic film. Cousin et al. do not specifically disclose a porous membrane of a synthetic polymer as required by present claim 22 and claims dependent therefrom and as required by present claim 33, or a hydrophilic porous membrane of a synthetic polymer as required by present claim 36. Accordingly, Cousin et al. also do not disclose the further limitations with respect to the porous membrane as set forth in present claims 26-28 or 32. The porous membranes required by the present claims are commercially available. It would have been within the skill of a worker in the art at the time of the invention to select a suitable porous substrate based on the properties that a particular porous substrate would lend to the final product.

Cousin et al. teach that surfactants may be included, but do not specifically disclose the surfactants recited in present claims 29-31. Absent a showing of criticality for a particular surfactant, it is the examiner's position that it would have been within the skill of a worker in the art to select a surfactant within the scope of the subspecies of cationic and non-ionic surfactants, as taught by the prior art, from known commercially-available surfactants. There is no suggestion

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in the present specification that the surfactants used in the present invention are not known commercially-available surfactants.

Cousin et al. do not disclose printing an image using an inkjet ink comprising pigment particles. Since pigment-containing ink jet inks are known, it would have been an obvious modification to one of skill in the art at the time of the invention to print an image on the prior art ink jet recording sheet by using a pigment-containing ink jet ink. The pigment particles in the ink would inherently be agglomerated by the polyvalent metal salt in the prior art recording sheet.

7. Applicants' arguments filed 04/05/00 have been fully considered but they are not persuasive with respect to the subject matter of claims 22, 25-34 and 36.

Applicants argue that the Cousin patent does not teach or suggest an inkjet receptor medium that includes a porous membrane of a synthetic polymer and a pigment management system that includes an inorganic multivalent metal salt coating impregnated into pores of the porous membrane. Applicants argue that Cousin et al. do not recognize that an inorganic multivalent metal salt, when impregnated into the pores of a porous membrane of a synthetic polymer, provides the advantages of pores of the substrate remaining open and prevention of pigmented inks from penetrating too far into the porous membrane.

Although Cousin et al. do not explicitly disclose a porous membrane of a synthetic polymer as a porous substrate, the examiner maintains the position set forth in the rejection regarding the obviousness of the selection of such a membrane for use as a porous substrate for

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Cousin's recording sheet. With respect to the advantages argued by applicants, the examiner notes that Cousin et al. teach a preference for water soluble polymers because they can be applied to paper without blocking the porous network of the paper sheet and interfering with ink absorption (c. 5, l. 25-32). It is reasonable to expect that the metal salts, which are applied in solution with the water soluble polymers, also would not block the porous network of a paper sheet or block the pores of any other porous substrate used. Further, Cousin's preference for components that do not block the pores of a porous substrate would provide guidance to one of skill in the art when selecting components to be used in combination with a porous substrate.

Cousin et al. motivate one of skill in the art to immerse a porous substrate in a solution containing polyvalent metal salts (c. 6, l. 15-16) which would inherently provide a multivalent metal salt coating in contact with surfaces of the pores as required by the rejected claims. Applicants' argued advantage with pigmented inks would inherently be attained in using the prior art recording sheet with pigmented inks. Further, Cousin's failure to recognize a specific advantage as pertains to the use of pigmented inks is particularly unpersuasive with respect to the rejected claims drawn to an inkjet receptor medium. The claimed medium is not limited by an intended use of printing with pigmented inks.

8. Claim 35 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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The inkjet receptor medium used in the method of claim 35 comprises a fluid management system comprising a surfactant, and comprises a pigment management system comprising an inorganic multivalent metal salt coating and functionalized particulates that interact with dispersants surrounding pigment particles in an applied inkjet ink. The Cousin patent, while disclosing a surfactant and an inorganic multivalent metal salt, does not suggest the functionalized particulates required by present claim 35.

9. Applicants are requested to check the amendment made to page 22, line 6 of the specification as requested in Paper No. 13. In entering the amendment, "cm²" has been changed to --Bcm²--. Is this the correct change?

10. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

MRY
05/10/00

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER

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